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BRIEF REPORT

Isolated mediastinal necrotizing granulomatous lymphadenopathy due to cat-scratch disease

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Abstract We report a patient suffering from cat-scratch disease limited to mediastinal lymphadenitis. Although rare, cat-scratch disease should be considered in the differential diagnosis of mediastinal lymphadenitis, especially when patients were exposed to cats.

A previously healthy 60-year-old woman presented with acute onset of malaise, fatigue, low-grade fever, night sweats, and mild dysphagia. Her physical examination was unremarkable. Laboratory tests revealed an elevated C-reactive protein level (99 mg/L), without other significant abnormalities.

The patient's history was characterized by numerous travels in 39 countries during the last 10 years. She visited Ethiopia a month before becoming symptomatic. There was no history of contact with tuberculosis or other contagious diseases. The patient lived with three cats, with which she had very close contacts, such as kissing and sleeping together. She reported occasional cat scratches, without significant inflammatory reaction.

Chest computed tomography (CT) revealed enlarged subcarinal and right hilar lymph nodes without concomitant parenchymal lung disease. Positron emission tomography (PET) showed increased fluorodeoxyglucose uptake in the subcarinal and right hilar lymph nodes only (Fig. 1). Bronchoscopy with endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) of the mediastinal lymph nodes was performed. Histopathological examination revealed clusters of epithelioid cells with granulomas and necrosis, and no malignant cells. Polymerase chain reaction (PCR) for *Mycobacterium tuberculosis*, non-tuberculous mycobacteria, and *Bartonella henselae* were performed. *B. henselae*-specific PCR was positive on two independent samples, at 18,400 and 129,000 copies/ml, respectively. Mycobacterial infection was excluded by negative PCR and cultures. *B. henselae* serology was also positive, with IgG >1/2,048 and IgM 1/20 titers. *Bartonella* endocarditis was excluded by two normal transthoracic echocardiographies done 4 weeks apart, by a normal eye fundus examination, and by a negative *Bartonella*-specific PCR in blood.

Cat-scratch disease (CSD) limited to mediastinal lymphadenitis was diagnosed, and treated with rifampin 600 mg/day and doxycycline 2×100 mg/day for 6 weeks. The treatment was successful, with rapid disappearance of all symptoms. Post-treatment chest CT showed a normal mediastinum (Fig. 1). The C-reactive protein level returned to normal.

The diagnosis of *B. henselae* infection was based on two independent positive PCRs, a highly positive serology, and granulomatous necrotizing lymphadenopathy, a common feature in CSD. EBUS-TBNA proved to be useful in providing the diagnosis through both histopathology and microbiological investigations. Chest involvement is rarely reported in CSD, and mostly concerned thoracic wall infection from a skin inoculation [1]. Mediastinal spread from cutaneous inoculation has exceptionally been

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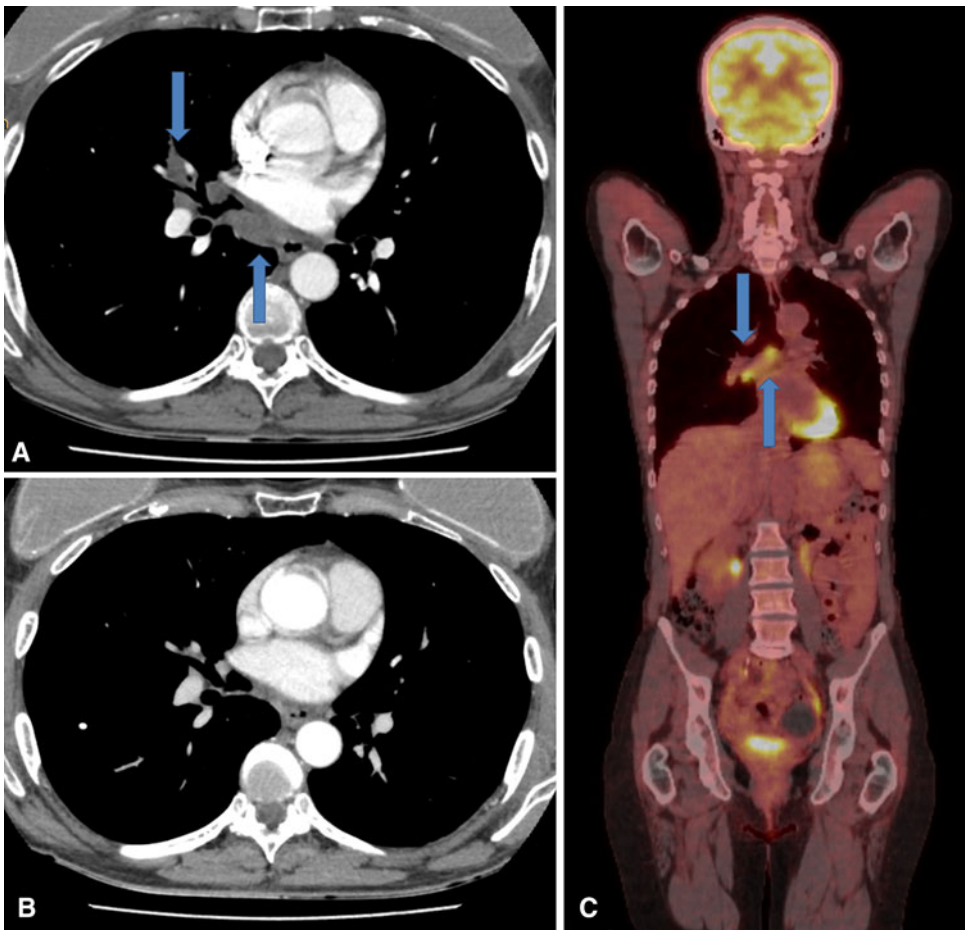

Fig. 1 **a** Right hilar and subcarinal lymphadenopathies as seen by computed tomography (CT) scanning at the time of diagnosis. **b** Disappearance of all lymphadenopathies after a 6-week treatment. **c** Positron emission tomography (PET) revealed increased fluorodeoxyglucose uptake in the right hilar and subcarinal lymph nodes at the time of diagnosis; there are no other sites of pathological tracer uptake

reported [2]. Mediastinal lymphadenitis has been described in patients with disseminated CSD [3] or with *B. henselae* endocarditis [4]. However, extrathoracic lymphadenitis and endocarditis were ruled out in our patient. We hypothesize that this unusual site may be due to a bronchial aspiration of an infected flea with consecutive infection of tracheobronchial mucosa, since a cutaneous inoculation is unlikely in the absence of other lymphadenopathies. Although experts recommend macrolide monotherapy for CSD with isolated lymphadenopathy [5], a combined therapy was prescribed in this case, given the unusual localization of the lesion.

Isolated mediastinal lymphadenitis is a possible, albeit rare, clinical expression of CSD. CSD should be included in the differential diagnosis of mediastinal lymph node enlargement, mainly in patients with a history of close contact with cats.

Conflict of interest No conflict.

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